

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 15-18 are pending in the present application. Claims 15 and 17 are amended by the present amendment. Support for amendments to the claims can be found in the disclosure as originally filed, at least in Fig. 7 and page 29, lines 10-28. Thus, no new matter is added.

In the Official Action, Claims 15-18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kerfoot et al. (U.S. Patent 6,704,511, hereinafter Kerfoot) in view of Ryu et al. (U.S. Patent No. 6,330,384, hereinafter Ryu) and Coa (U.S. Patent No. 6,731,877).

Addressing now the rejection of Claim 15-18 under 35 U.S.C. §103(a) as unpatentable over Kerfoot, Ryu and Coa, that rejection is respectfully traversed.

Claim 15 recites, in part,

a dummy optical signal source device configured to generate the non-modulated spectrum slice optical signal, including:

...at least a first and second output optical amplifier, each having an input connected to an output of a respective one of the dummy signal optical multiplexers, and having respective outputs,

an amplification controller configured to modify a gain of at least one non-modulated spectrum slice optical signal component in order to maintain a predetermined overall gain profile of the non-modulated spectrum slice optical signal components when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components, and

a dummy signal optical multiplexer connecting the respective outputs of the output optical amplifiers to the optical multiplexer.

Claim 17 is directed to corresponding methods for wavelength division multiplexing and optical transmission.

Kerfoot describes a wavelength division multiplex optical signal including a WDM combiner to provide a source signal, at least one transmitter coupled to an input of the WDM combiner, a broadband noise source, and a filter coupled between the broadband noise source and another input of the WDM combiner. In one embodiment, the filter is an optical notch filter. In another embodiment, the filter includes a WDM demultiplexer coupled through plural filters to provide a plurality of noise signals, and a WDM multiplexer coupled through at least one of the plural filters to respective noise signals.

Ryu describes an optical system having a light source, couplers and amplifiers. Fig. 3 of Ryu shows a signal input terminal terminated without reflection.

Cao describes connecting an optical amplifier 24a to a multiplexer 28 via a dispersion compensating element 26a.

However, the combination of Kerfoot, Ryu and Cao does not describe or suggest an amplification controller configured to modify a gain of at least one non-modulated spectrum slice optical signal component in order to maintain a predetermined overall gain profile of the non-modulated spectrum slice optical signal components when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components, as is recited in Claim 15.

The outstanding Action acknowledges on page 4 that Kerfoot and Ryu does not describe or suggest the at least a first and second output optical amplifier, each having an input connected to an output of a respective one of the dummy signal optical multiplexers, and having respective outputs.

Nevertheless the outstanding Action cites Cao as curing the above noted deficiencies of Kerfoot and Ryu. Specifically, the outstanding Action cites Cao as illustrating that “it is well recognized that an optical signal degrades as it travels through a transmission line or an

optical component and it is also well recognized that an optical amplifier could be used at any point of a communication system to restore signal strength of an optical signal.”

However, Applicants respectfully submit that Cao does not describe or suggest an amplification controller configured to modify a gain of at least one non-modulated spectrum slice optical signal component in order to maintain a predetermined overall gain profile of the non-modulated spectrum slice optical signal components when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components.

Applicants note that the combination of the output optical amplifiers and the amplification controller in the claimed invention provide an advantageous feature that is distinct from merely restoring signal strength of an individualized optical signal.

Specifically, the claimed invention describes ensuring that the overall gain profile of the non-modulated spectrum slice optical signal components is maintained in the event of a malfunction having an effect on the non-modulated spectrum slice optical signal components. In order to achieve this advantageous feature the claimed invention recites boosting the gain of at least one of the other non-modulated spectrum slice optical signal components in order to compensate for the missing component and ensure that the overall gain is maintained. This feature is simply not described or suggested in any of the cited Kerfoot, Ryu or Cao references.

Accordingly, Applicants respectfully submit that Claims 15 and 17, and claims depending therefrom, respectively, patentably distinguish over Kerfoot, Ryu and Cao considered individually or in combination.

Consequently, in view of the present amendment and in light of the previous discussion, Applicants respectfully submit that the present application is in condition for allowance and respectfully request an early and favorable action to that effect.


Respectfully submitted,

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